SEQUENCE LISTING

<110> The UAB Research Foundation

     MARTIN, Michael

<120> Methods and Compositions Related to
   Regulation of Cytokine Production by Glycogen Synthase
   Kinase 3 (GSK-3)

<130> 21085.0072P1

<140> Unassigned
<141> 2005-03-09

<150> 60/551,646
<151> 2004-03-09

<160> 6

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 483
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
      synthetic construct

<400> 1
Met Ser Gly Gly Gly Pro Ser Gly Gly Gly Pro Gly Gly Ser Gly Arg
 1   5   10   15
Ala Arg Thr Ser Ser Phe Ala Glu Pro Gly Gly Gly Gly Gly Gly Gly
            20   25   30
Gly Gly Gly Pro Gly Gly Ser Ala Ser Gly Pro Gly Gly Thr Gly Gly
            35   40   45
Gly Lys Ala Ser Val Gly Ala Met Gly Gly Gly Val Gly Ala Ser Ser
    50   55   60
Ser Gly Gly Gly Pro Gly Gly Ser Gly Gly Gly Ser Gly Gly Pro
65   70   75   80
Gly Ala Gly Thr Ser Phe Pro Pro Pro Gly Val Lys Leu Gly Arg Asp
                85   90   95
Ser Gly Lys Val Thr Thr Val Val Ala Thr Leu Gly Gln Gly Pro Glu
            100   105   110
Arg Ser Gln Glu Val Ala Tyr Thr Asp Ile Lys Val Ile Gly Asn Gly
            115   120   125
Ser Phe Gly Val Val Tyr Gln Ala Arg Leu Ala Glu Thr Arg Glu Leu
    130   135   140
Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg Glu
145   150   155   160
Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu Arg
                165   170   175
Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Leu Tyr Leu Asn
                180   185   190
Leu Val Leu Glu Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg His
            195   200   205
Phe Thr Lys Ala Lys Leu Thr Ile Pro Ile Leu Tyr Val Lys Val Tyr
    210   215   220

```
Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Gln Gly Val
225             230             235             240
Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Val Asp Pro Asp Thr
            245             250             255
Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val Arg
            260             265             270
Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala Pro
        275             280             285
Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val Trp
        290             295             300
Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile Phe
305             310             315             320
Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val Leu
            325             330             335
Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr Thr
            340             345             350
Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val Phe
            355             360             365
Lys Ser Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Ser Leu Leu
        370             375             380
Glu Tyr Thr Pro Ser Ser Arg Leu Ser Pro Leu Glu Ala Cys Ala His
385             390             395             400
Ser Phe Phe Asp Glu Leu Arg Cys Leu Gly Thr Gln Leu Pro Asn Asn
            405             410             415
Arg Pro Leu Pro Pro Leu Phe Asn Phe Ser Ala Gly Glu Leu Ser Ile
            420             425             430
Gln Pro Ser Leu Asn Ala Ile Leu Ile Pro Pro His Leu Arg Ser Pro
        435             440             445
Ala Gly Thr Thr Thr Leu Thr Pro Ser Ser Gln Ala Leu Thr Glu Thr
    450             455             460
Pro Thr Ser Ser Asp Trp Gln Ser Thr Asp Ala Thr Pro Thr Leu Thr
465             470             475             480
Asn Ser Ser
```

```
<210> 2
<211> 420
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
      synthetic construct

<400> 2
Met Ser Gly Arg Pro Arg Thr Thr Ser Phe Ala Glu Ser Cys Lys Pro
 1           5               10              15
Val Gln Gln Pro Ser Ala Phe Gly Ser Met Lys Val Ser Arg Asp Lys
            20              25              30
Asp Gly Ser Lys Val Thr Thr Val Val Ala Thr Pro Gly Gln Gly Pro
        35              40              45
Asp Arg Pro Gln Glu Val Ser Tyr Thr Asp Thr Lys Val Ile Gly Asn
    50              55              60
Gly Ser Phe Gly Val Val Tyr Gln Ala Lys Leu Cys Asp Ser Gly Glu
65              70              75              80
Leu Val Ala Ile Lys Lys Val Leu Gln Asp Lys Arg Phe Lys Asn Arg
            85              90              95
Glu Leu Gln Ile Met Arg Lys Leu Asp His Cys Asn Ile Val Arg Leu
            100             105             110
Arg Tyr Phe Phe Tyr Ser Ser Gly Glu Lys Lys Asp Glu Val Tyr Leu
        115             120             125
```

```
Asn Leu Val Leu Asp Tyr Val Pro Glu Thr Val Tyr Arg Val Ala Arg
    130                 135             140
His Tyr Ser Arg Ala Lys Gln Thr Leu Pro Val Ile Tyr Val Lys Leu
145                 150                 155                 160
Tyr Met Tyr Gln Leu Phe Arg Ser Leu Ala Tyr Ile His Ser Phe Gly
                165                 170                 175
Ile Cys His Arg Asp Ile Lys Pro Gln Asn Leu Leu Leu Asp Pro Asp
            180                 185                 190
Thr Ala Val Leu Lys Leu Cys Asp Phe Gly Ser Ala Lys Gln Leu Val
        195                 200                 205
Arg Gly Glu Pro Asn Val Ser Tyr Ile Cys Ser Arg Tyr Tyr Arg Ala
    210                 215                 220
Pro Glu Leu Ile Phe Gly Ala Thr Asp Tyr Thr Ser Ser Ile Asp Val
225                 230                 235                 240
Trp Ser Ala Gly Cys Val Leu Ala Glu Leu Leu Leu Gly Gln Pro Ile
                245                 250                 255
Phe Pro Gly Asp Ser Gly Val Asp Gln Leu Val Glu Ile Ile Lys Val
                260                 265                 270
Leu Gly Thr Pro Thr Arg Glu Gln Ile Arg Glu Met Asn Pro Asn Tyr
            275                 280                 285
Thr Glu Phe Lys Phe Pro Gln Ile Lys Ala His Pro Trp Thr Lys Val
    290                 295                 300
Phe Arg Pro Arg Thr Pro Pro Glu Ala Ile Ala Leu Cys Ser Arg Leu
305                 310                 315                 320
Leu Glu Tyr Thr Pro Thr Ala Arg Leu Thr Pro Leu Glu Ala Cys Ala
                325                 330                 335
His Ser Phe Phe Asp Glu Leu Arg Asp Pro Asn Val Lys Leu Pro Asn
                340                 345                 350
Gly Arg Asp Thr Pro Ala Leu Phe Asn Phe Thr Thr Gln Glu Leu Ser
            355                 360                 365
Ser Asn Pro Pro Leu Ala Thr Ile Leu Ile Pro Pro His Ala Arg Ile
    370                 375                 380
Gln Ala Ala Ala Ser Pro Pro Ala Asn Ala Thr Ala Ala Ser Asp Thr
385                 390                 395                 400
Asn Ala Gly Asp Arg Gly Gln Thr Asn Asn Ala Ala Ser Ala Ser Ala
                405                 410                 415
Ser Asn Ser Thr
            420
```

```
<210> 3
<211> 2189
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
      synthetic construct

<400> 3
gcggcgcggc ctggaagagg ccagggcccg ggggaggcgg cggcagcggc ggcggctggg    60
gcagcccggg cagcccgagc cccgcagcct gggcctgtgc tcggcgccat gagcggcggc   120
gggccttcgg gaggcggccc tggggggctcg gcagggcgc ggactagctc gttcgcggag    180
cccggcggcg gaggcggagg aggcggcggc ggccccggag gctcggcctc cggcccaggc    240
ggcaccggcg gcggaaaggc atctgtcggg gccatgggtg ggggcgtcgg ggcctcgagc    300
tccggggggtg gacccggcgg cagcggcgga ggaggcagcg gagggccccgg cgcaggcact   360
agcttcccgc cgcccggggt gaagctgggc cgtgacagcg ggaaggtgac cacagtcgta    420
gccactctag gccaaggccc agagcgctcc caagaagtgg cttacacgga catcaaagtg    480
attggcaatg gctcatttgg ggtcgtgtac caggcacggc tggcagagac cagggaacta    540
gtcgccatca agaaggttct ccaggacaag aggttcaaga accgagagct gcagatcatg    600
cgtaagctgg accactgcaa tattgtgagg ctgagatact ttttctactc cagtggcgag    660
aagaaagacg agctttacct aaatctggtg ctggaatatg tgcccgagac agtgtaccgg    720
```

```
gtggcccgcc acttcaccaa ggccaagttg accatcccta tcctctatgt caaggtgtac        780
atgtaccagc tcttccgcag cttggcctac atccactccc agggcgtgtg tcaccgcgac        840
atcaagcccc agaacctgct ggtggaccct gacactgctg tcctcaagct ctgcgatttt        900
ggcagtgcaa agcagttggt ccgaggggag cccaatgtct cctacatctg ttctcgctac        960
taccgggccc cagagctcat ctttggagcc actgattaca cctcatccat cgatgtttgg       1020
tcagctggct gtgtactggc agagctcctc ttgggccagc ccatcttccc tggggacagt       1080
ggggtggacc agctggtgga gatcatcaag gtgctgggaa caccaacccg ggaacaaatc       1140
cgagagatga accccaacta cacggagttc aagttccctc agattaaagc tcacccctgg       1200
acaaaggtgt tcaaatctcg aacgccgcca gaggccatcg cgctctgctc tagcctgctg       1260
gagtacaccc catcctcaag gctctcccca ctagaggcct gtgcgcacag cttctttgat       1320
gaactgcgat gtctgggaac ccagctgcct aacaaccgcc cacttccccc tctcttcaac       1380
ttcagtgctg gtgaactctc catccaaccg tctctcaacg ccattctcat ccctcctcac       1440
ttgaggtccc cagcgggcac taccaccctc accccgtcct cacaagcttt aactgagact       1500
ccgaccagct cagactggca gtcgaccgat gccacaccta ccctcactaa ctcctcctga       1560
gggcccccacc aagcaccctt ccacttccat ctgggagccc caagaggggc tgggaagggg       1620
ggccatagcc catcaagctc ctgccctggc tgggccccta gactagaggg cagaggtaaa       1680
tgagtccctg tccccacctc cagtccctcc ctcaccagcc tcaccccctgt ggtgggcttt       1740
ttaagaggat tttaactggt tgtggggagg gaagagaagg acagggtgtt gggggggatga       1800
ggacctccta cccccttggc cccctccct ccccagacc tccacctcct ccagacccc         1860
tcccctcctg tgtcccttgt aaatagaacc agccagccc gtctcctctt cccttccctg        1920
gcccccgggt gtaaatagat tgttataatt tttttcttaa agaaacgtc gattcgcacc        1980
gtccaacctg gccccgcccc tcctacagct gtaactcccc tcctgtcctc tgcccccaag       2040
gtctactccc tcctcacccc accctggagg gccaggggag tggagagagc tcctgatgtc       2100
ttagtttcca cagtaaggtt tgcctgtgta cagacctccg ttcaataaat tattggcatg       2160
aaaacctgaa aaaaaaaaa aaaaaaaaa                                           2189
```

<210> 4
<211> 1639
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
      synthetic construct

<400> 4
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atcatctata tgttaaatat ccgtgccgat ctgtcttgaa ggagaaatat atcgcttgtt         60
ttgttttta tagtatacaa aaggagtgaa aagccaagag gacgaagtct ttttctttt         120
cttctgtggg agaacttaat gctgcattta tcgttaacct aacaccccaa cataaagaca        180
aaaggaagaa aaggaggaag gaaggaaaag gtgattcgcg aagagagtga tcatgtcagg        240
gcggcccaga accacctcct ttgcggagag ctgcaagccg gtgcagcagc cttcagcttt        300
tggcagcatg aaagttagca gagacaagga cggcagcaag gtgacaacag tggtggcaac        360
tcctgggcag ggtccagaca ggccacaaga agtcagctat acagacacta aagtgattgg        420
aaatggatca tttggtgtgg tatatcaagc caaactttgt gattcaggag aactggtcgc        480
catcaagaaa gtattgcagg acaagagatt taagaatcga gagctccaga tcatgagaaa        540
gctagatcac tgtaacatag tccgattgcg ttatttcttc tactccagtg gtgagaagaa        600
agatgaggtc tatcttaatc tggtgctgga ctatgttccg gaaacagtat acagagttgc        660
cagacactat agtcgagcca aacagacgct ccctgtgatt tatgtcaagt tgtatatgta        720
tcagctgttc cgaagtttag cctatatcca ttcctttgga atctgccatc gggatattaa        780
accgcagaac ctcttgttgg atcctgatac tgctgtatta aaactctgtg actttggaag        840
tgcaaagcag ctggtccgag gagaacccaa tgtttcgtat atctgttctc ggtactatag        900
ggcaccagag ttgatctttg agccactga ttatacctct agtatagatg tatggtctgc         960
tggctgtgtg ttggctgagc tgttactagg acaaccaata tttccagggg atagtggtgt       1020
ggatcagttg gtagaaataa tcaaggtcct gggaactcca acaagggagc aaatcagaga       1080
aatgaaccca aactacacag aatttaaatt ccctcaaatt aaggcacatc cttggactaa       1140
ggattcgtca ggaacaggac atttcacctc aggagtgcgg gtcttccgac cccgaactcc       1200
accggaggca attgcactgt gtagccgtct gctggagtat acaccaactg cccgactaac       1260
accactggaa gcttgtgcac attcattttt tgatgaatta cgggacccaa atgtcaaact       1320
accaaatggg cgagacacac ctgcactctt caacttcacc actcaagaac tgtcaagtaa       1380
tccacctctg gctaccatcc ttattcctcc tcatgctcgg attcaagcag ctgcttcaac       1440
ccccacaaat gccacagcag cgtcagatgc taatactgga gaccgtggac agaccaataa       1500
```

```
tgctgcttct gcatcagctt ccaactccac ctgaacagtc ccgagcagcc agctgcacag      1560
gaaaaaccac cagttacttg agtgtcactc agcaacactg gtcacgtttg gaaagaatat      1620
taaaaaaaaa aaaaaaaaa                                                    1639
```

<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
      synthetic construct

<400> 5
```
ggggggacgat cgtcgggggg                                                       20
```

<210> 6
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence; note =
      synthetic construct

<400> 6
```
ggggggagcat gctgcggggg                                                       20
```